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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,355	06/09/2005	Klaus K Nielsen	0147-0262PUS1	5659

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EXAMINER

BAUM, STUART F

ART UNIT	PAPER NUMBER
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1638

NOTIFICATION DATE	DELIVERY MODE
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08/20/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/507,355	Applicant(s) NIELSEN ET AL.	
	Examiner STUART F. BAUM	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 65-101 is/are pending in the application.
- 4a) Of the above claim(s) 67 and 81-85 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 65,66,68-80 and 86-101 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The amendment and declaration filed 5/1/2008 has been entered.

2. Claims 65-101 are pending.

Claims 67, 81-85 are withdrawn from consideration for being drawn to a non-elected invention.

Claims 1-64 have been canceled.

Claims 86-101 have been newly added and are drawn to the elected invention.

3. Claims 65-66, 68-80 and 86-101, including the coding sequence of SEQ ID NO:1 or 2 which encodes SEQ ID NO:3, are examined in the present office action.

4. Rejections and objections not set forth below are withdrawn.

5. The text of those sections of Title 35, U.S. Code not included in this office action can be found in a prior office action.

Claim Objections

6. Claims 86-88 and 100-101 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must state the claims from which it is dependent in the alternative. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 66, 68-80 and 86-101 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection includes dependent claims.

Claims 66, 86 and 87 recite the limitation "(d)" in claim 65. There is insufficient antecedent basis for this limitation in the claim.

Written Description

8. Claims 65-66 and 68-80 remain rejected and new claims 86 and 88-100 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is maintained for the reasons of record set forth in the Official action mailed 1/2/2008. Applicant's arguments filed 5/1/2008 have been fully considered but they are not persuasive.

Applicants contend that sequences with at least 83% identity to SEQ ID NO:1 or 2, or to the amino acid SEQ ID NO:3 can be expected to come from a grass species (page 10 of Remarks, 2nd paragraph). Applicants contend sequences listed in the table enclosed with the declaration all have at least 83% sequence identity to the LpTFL1 of the invention and contain a YESP(K/R) motif (*Ibid*).

The Office invites Applicants to submit the accession numbers of the sequences in an IDS for the Office to consider.

Scope of Enablement

9. Claims 65-66 and 68-80 remain rejected and new claims 86 and 88-100 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for SEQ ID NO:1 or 2 encoding SEQ ID NO:3 and plant transformation therewith and method of reducing or preventing flowering comprising expressing SEQ ID NO:1 or 2 or a polynucleotide encoding SEQ ID NO:3 in a plant, does not reasonably provide enablement for any polynucleotide exhibiting less than 100% sequence identity to SEQ ID NO:1 or 2 or to a polynucleotide encoding a protein exhibiting less than 100% identity to SEQ ID NO:3 and plant transformation therewith and method of reducing or preventing flowering comprising said polynucleotide. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. This rejection is maintained for the reasons of record set forth in the Official action mailed 1/2/2008. Applicant's arguments filed 5/1/2008 have been fully considered but they are not persuasive.

Applicants contend the present invention teaches one skilled in the art how to make sequences with less than 100% identity to SEQ ID NO:3 because it teaches one skilled in the art how to discover functional polypeptides having less than 100% sequence identity (page 11 of Remarks, 2nd full paragraph). Applicants contend the specification discloses eleven amino acid residues which are essential for a functional protein. Applicants contend the specification teaches one skilled in the art how to transform a plant with a nucleic acid from the invention and then compare the flowering behavior of the transformed plant with that of a corresponding non-transformed plant (page 11 of Remarks, bottom paragraph). Applicants contend this procedure

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does not constitute undue experimentation taken in light of *Ex Parte Kubin* (paragraph bridging pages 11 and 12 of Remarks).

The Office contends that Applicants do not disclose other polynucleotides falling within the scope of the claimed invention which produces the same result as SEQ ID NO:1 or 2 or polynucleotides encoding SEQ ID NO:3. Applicants have not taught which amino acids are essential and which amino acids can be changed such that when said protein is expressed in a plant, it produces a delayed flowering phenotype. The Office contends that given Applicants' statement that not all members of the PEBP gene family have the same activity in relation to floral control (page 3, lines 15-17) and given the lack of explicit definition of "LpTFL1-like activity", the fact pattern of the instant case and the fact pattern from *Ex Parte* are not congruent. Therefore, undue trial and error experimentation would be required by one of skill in the art to make and/or use the broadly claimed invention.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 65, 66, 68, 71, 73, 75-76, 79 and 87 are rejected under 35 U.S.C. 102(a) as being anticipated by Jensen et al (2001, Plant Physiology 125:1517-1528).

The claims are drawn to a method of reducing or preventing flowering in a plant comprising expressing a polynucleotide comprising SEQ ID NO:1 or 2 or a polynucleotide which encodes a polypeptide of SEQ ID NO:3 or a polynucleotide sequence having at least 83% identity with SEQ ID NO:1 or 2 or with a nucleotide sequence encoding SEQ ID NO:3, or wherein the polynucleotide has a percentage value of identity of any one of the values listed in

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claim 66; or wherein the polynucleotide is operably linked to the 35S promoter, or a transgenic plant transformed with said polynucleotide or wherein the plant is a vegetable brassicas.

Because of the indefiniteness of claims 66 and 86-87 as discussed above, the office interprets the claims to be dependent on claim 65(c).

The Office interprets "LpTFL1-like activity" to mean any activity because Applicants do not define this term.

Jensen et al disclose a nucleic acid sequence encoding the LpTFL1 protein operably linked to the Ubiquitin promoter and transformed into Arabidopsis (page 1527, paragraph bridging left and right columns). Jensen et al disclose that transformed Arabidopsis plants exhibited delayed flowering. The Office contends the LpTFL1 protein of Jensen et al is the same as Applicants' LpTFL1 because both proteins are from *Lolium perenne*. Jensen et al disclose the LpTFL1 protein comprises the sequence YESP(K/R) and as such, Jensen et al anticipate the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 65-66, 68-80 and 86-101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al (2001, Plant Physiology 125:1517-1528).

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The claims are drawn to a method of reducing or preventing flowering in a plant comprising expressing a polynucleotide comprising SEQ ID NO:1 or 2, or comprises a nucleotide sequence encoding SEQ ID NO:3 or a polynucleotide sequence having at least 83% identity with SEQ ID NO:1 or 2 or with a nucleotide sequence encoding SEQ ID NO:3 and wherein said nucleotide sequence encodes a polypeptide having LpTFL1-like activity and comprising the amino acid sequence YESP(K/R), or wherein the polynucleotide has a percentage value of identity of any one of the values recited in claim 66; or wherein the polynucleotide is operably linked to the 35S promoter, or a transgenic plant transformed with said polynucleotide or wherein the plant is a vegetable brassicas, or wherein the plant is a biennial or perennial or a monocot, or wherein the plant belongs to any of the members listed in claims 88-99.

Because of the indefiniteness of claims 66 and 86-87 as discussed above, the office interprets the claims to be dependent on claim 65(c).

The Office interprets “LpTFL1-like activity” to mean any activity because Applicants do not define this term.

The teachings of Jensen et al have been discussed above.

Jensen et al do not teach a biennial, perennial, monocot plant or any of the plants listed in claims 88-99, or a nucleic acid exhibiting 95% identity to the nucleic acid recited in claim 65 (a) or 65 (b).

Given the recognition of those of ordinary skill in the art the value of prolonging the vegetative phase of a plant as taught by Jensen et al (page 1523, right column, bottom paragraph), and given the success of Jensen et al of prolonging the vegetative phase of Arabidopsis by transforming an Arabidopsis plant with a construct comprising a nucleic acid

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molecule encoding the LpTFL1 protein operably linked to the ubiquitin promoter, one of ordinary skill in the art would be motivated to isolate other nucleic acid molecules encoding homologues of the LpTFL1 gene, and to use these sequences to delay flowering in plants. The Office contends choosing one type of plant over another (i.e., a biennial, perennial or monocot or any listed in claims 88-99) is not a patentable distinction and choosing a sequence with any one of the percent identities listed in claim 66 is merely a design choice and is not a critical parameter, absent evidence to the contrary.

Thus the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, especially in the absence of evidence to the contrary.

12. No claims are allowed.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart F. Baum whose telephone number is 571-272-0792. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Stuart F. Baum/
Stuart F. Baum Ph.D.
Primary Examiner
Art Unit 1638
August 11, 2008